

(2.) *Lunar halos* were observed at Afton and Mt. Vernon, Iowa, on the 15th; at Wilsonville, Ala., Cornish and Standish, Me., North Adams, Mass., Wilmington, N. C., Falsington, Pa., West Charlotte, Vt., on the 16th; at Havana, Ill., Cresco, Iowa, Rocky Run and Utica, Wis., on the 18th; at West Point, Brook Haven and New York City, N. Y., Southington, Conn., Andover and Fall River, Mass., Atco and Freehold, N. J., Falsington, Ephrata, Williamsport, Reading and Tioga, Pa., on the 19th; at Havana, Ill., Afton, Iowa, Freehold, N. J., and New York City, on the 20th; at Atlanta, Ga., Hennepin and Havana, Ill., Standish, Me., Litchfordville and Hudson, Mich., Trenton, N. J., Wilmington, N. C., Carthagen and Mt. Auburn, Ohio, on the 21st; at Dunbarton, N. H., and Lunenburg, Vt., on the 22d; at Auburn, N. H., on the 23d; at Litchfordville, Mich., on the 24th; at Gardiner, Me., and Woodstock, Vt., on the 27th; and again at Woodstock, Vt., on the 28th and 30th.

At Long Branch a *lunar halo* was visible from the 19th till 2 a. m. of the 20th; one was seen at Santa Fé on the 17th; at Erie, Penn., on the 27th; at Breckinridge, Minn., on the 24th; at Augusta, Ga., on the 24th; at Eastport, Me., on the 21st, one of great diameter; one at Knoxville on the 24th, with a lunar cross; on the 21st, one of exceeding brilliance at Lexington, Ky.; a large *halo* at Milwaukee, on the 20th; at Morgantown, W. Va., on the 16th 19th and 21st, (with a radius of 22°); at Rochester, on the 27th; at New York and New Haven on the 19th; and a *lunar corona* at Fort Gibson, Indian Territory, on the 22d.

The lunar halos, both on account of their number and intensity, are of special interest in connection with the cyclone of the 21st to 23d.

CAUTIONARY SIGNALS.

During the month of November there were displayed at the United States ports, maritime and inland, seventy-five storm-warnings, and, at Canadian ports, forty-two. The resulting weather shows that, of the seventy-five warnings displayed at United States ports, sixty were fully justified, and three were partly justified. This gives (as the percentage of perfect justification) *eighty per cent.* Most of these warning-signals were of great value to shipping, as shown by the journals and public press. A Milwaukee paper, speaking of the small number of disasters from the great gale of the 23d, says: "This is undoubtedly due to the Cautionary Signal which kept vessels in port." The signal was hoisted here nine hours before the storm began, and not a single vessel left port during the display, and several owners and captains afterwards stated that their cargoes and vessels were saved by obedience to the signal. The insurance companies refused to take risks on any vessel disobeying the signal. All along the Lakes, the benefit of the warnings was largely and most favorably commented upon.

MISCELLANEOUS PHENOMENA.

(1.) *Forest fires, &c.*—There were not many forest or prairie fires, but the extensive conflagrations of October, owing to the lateness of the season and the arrival of the fall rains, were mostly extinguished early in November. About the 6th of the month, a few fires, in the Piedmont region of Virginia, were put out by rain. Fires were burning in the woods near Urbana, Ohio, on the 3d, and much smoke overspread Charleston, S. C., on the 2nd, 3d and 4th. Prairie fires were reported from Cave Spring, Missouri, on the 10th and 11th. Large prairie fires to the east of North Platte, Nebraska, were observed on the 1st of November. No other noteworthy conflagrations were registered.

(2.) *Migration of birds.*—On the 8th, at Memphis, birds were observed going southward; and on the 9th, wild geese and blackbirds. At Fort Randall, Dakota, wild geese were seen going south on the 9th; so also, at Fort Madison, Iowa, on the 26th; on the 23d, 24th and 25th they were seen going north and northwest; at Gardiner, Maine, going south on the 17th; at Warrensburg, Missouri, on the 8th, geese, ducks and cranes were observed going south; at Plattsmouth, on the 4th, geese going south; at Centre Cookville, N. H., going south on the 14th, and Auburn, N. H., on the 23d; at New Germantown, N. J., going south on the 1st; geese going south at Carthage, Ohio, on the 12th, 13th and 14th.

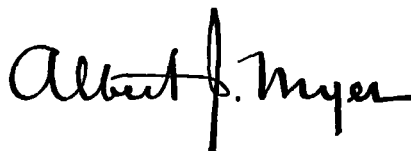
(3.) *Meteors* were recorded at Vevay, Ind., on the 11th and 12th; at Afton, Iowa, on the 6th; at Woodstock, Md., (bright meteors) on the 29th; at Somerset, Mass., on the 12th; at Fall River, Mass., on the 2d and 12th; at Freehold, N. J., on the 16th; at New York city, on the 14th; at Troy, N. Y., on the 11th and 14th; at North Volney, N. Y., on the 1st and 9th; at Mount Pleasant, N. C., brilliant meteors on the 11th; at Woodstock, Vermont, on the 11th and 30th; near Lewisville, Va., on the 15th.

(4.) *First frosts, snows, &c*—The first frost formed at Savannah, Galveston, and Shreveport, Texas, on 1st November; at Wilmington, North Carolina, on the 2nd; at Norfolk, Fayette, Miss., on the 1st; at Montgomery, heavy frost, on the 2nd; at Augusta, Georgia, on the 2nd; and at Mobile, Alabama, on the 1st, 2nd and 3d; at Lake City, Florida, on the 2nd. The first snows fell at Memphis and Fort Gibson, Indian Territory, on the 28th; Nashville, on the 24th and 28th; West Point, N. Y., on the 20th; Humboldt, Tennessee, on the 28th; Southington, Connecticut, on the 15th; Blandville, Kentucky, on the 24th; Hudson, Michigan, on the 19th; and Shelburne, New Hampshire, on the 21st. Ice formed at Nashville, on the 26th. The first cold snap of the winter at St. Paul, Minnesota, occurred on the 17th. Ice formed at Cincinnati on the 21st.

(5.) *Close of Navigation.*—On the 18th, Lake Superior was frozen over between Duluth and Superior, and the steam ferry-boat cut down and sunk in shoal water on Minnesota Point. The river froze at La Crosse, Wisconsin, and St. Paul, Minnesota, on the 29th; at Omaha, on the 25th; at Yaukton, on the 26th, and Fort Sully on the 18th. Navigation closed at Dubuque, Iowa, on the 21st, and at Keokuk, was seriously impeded on the 30th.

During November, the utility of the Signal Service temperature-predictions has been largely recognized by the Pork Packing business in the West in deciding upon the weather favorable or unfavorable for slaughtering.

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